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EXAMINER

ORTIZ, EDGARDO

ART UNIT PAPER NUMBER

2815

DATE MAILED: 01/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/904,556

Applicant(s)

Ito Et.al.

Examiner

Edgardo Ortiz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Sep 22, 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15, 18, and 19 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4, 6, 10, 12, 14, and 18 is/are rejected.
- 7) ☒ Claim(s) 2, 3, 5, 7-9, 11, 13, 15, and 19 is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other:

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DETAILED ACTION

This Office Action is in response to an amendment filed September 22, 2003.

Claim Rejections - 35 U.S.C. § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4 and 18 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Applicant's admitted prior art as shown on figures 1-3B and their descriptions on pages 1-9 of the instant application in view of Sonoda et.al. (U.S. Patent No. 4,258,080). With regard to Claim 1, Applicant's admitted prior art teaches a protective film (114) protecting a dielectric layer (112) of a plasma display panel (PDP) from discharge, containing metallic oxide (MgO).

However, Applicant's admitted prior art fails to teach the volume resistivity of the protective film as claimed. Sonoda discloses a method on which a metal oxide semiconductor or a conductive material of a desired resistivity can be obtained by controlling the quantity of an unsaturated metal halide (See column 8, lines 1-6). Therefore, it would have been an obvious modification to someone with ordinary skill in the art, at the time of the invention, to modify the structure as

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taught by Applicant's admitted prior art to include the volume resistivity as claimed, as suggested by Sonoda, in order to reduce sputtering effect and reduce driving voltages. Additionally, discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

With regard to Claim 4, Applicant's admitted prior art teaches a protective film (14) comprising a metallic oxide that is MgO.

With regard to Claim 18, the claim language does not structurally distinguish from that taught by the prior art as stated supra.

Claim 6 is rejected under 35 U.S.C. § 103 (a) as being unpatentable over Applicant's admitted prior art as shown on figures 1-3B and their descriptions on pages 1-9 of the instant application in view of M.O. Aboelfotoh: Binn. Display Res. Conf. Records P62 (1978). With regard to Claim 6, a further difference between the claimed invention and Applicant's admitted prior art is, a peak of light emission intensity of light emitting center in 510 to 560 nm in a cathode luminescence is higher than that of light emission intensity of light emitting center in 280 to 440 nm or 680 to 760 nm.

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Aboelfotoh discloses an absorption wavelength peak at the light emitting wavelength peak at the light emitting wavelength peak at the light emitting wavelength of 360 nm to 400 nm is a peak called F+ center caused by oxygen deficit, an absorption peak at the light emitting wavelength of about 520 nm is a peak caused by exciton, and an absorption peak at the light emitting wavelength of about 730 nm is a peak caused by excessive oxygen. Therefore, it would have been an obvious modification to someone with ordinary skill in the art, at the time of the invention, to modify the structure as taught by Applicant's admitted prior art to provide the claimed peak of light emission intensity, as suggested by Aboelfotoh, by adjusting the oxygen concentration.

Claim 10 is rejected are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Applicant's admitted prior art as shown on figures 1-3B and their descriptions on pages 1-9 of the instant application in view of Furuya (Japanese Patent Laid-Open No. 9-295894). With regard to Claim 10, as stated supra, essentially discloses the claimed invention but fails to show, said protective film is formed by means of performing a heat treatment in atmosphere including hydrogen in excited or ionized state. Furuya teaches a plasma display panel wherein a protective film is formed by means of performing a heat treatment in atmosphere including hydrogen in excited or ionized state. Therefore, it would have been an obvious modification to someone with ordinary skill in the art, at the time of the invention, to modify the structure as taught by Applicant's admitted prior art to provide a protective film is formed by means of performing a

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heat treatment in atmosphere including hydrogen in excited or ionized state, as suggested by Furuya, in order to improve the orientation properties of the protective film.

Additionally the limitation "*said protective film is formed by means of performing a heat treatment in atmosphere including hydrogen in excited or ionized state*" is a product by process limitation. A "product by process" claim is directed to the product per se, no matter how actually made, In re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In re Fessmann, 180 USPQ 324; In re Avery, 186 USPQ 161; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); In re Marosi et al, 218 USPQ 289; and particularly In re Thorpe, 227 USPQ 964, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that applicant has the burden of proof in such cases, as the above case law makes clear.

Claim 12 is rejected are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Applicant's admitted prior art as shown on figures 1-3B and their descriptions on pages 1-9 of the instant application in view of Aoki (Japanese Patent Laid-Open No. 11-3665). With regard to Claim 12, Applicant's admitted prior art, as stated supra, essentially discloses the claimed invention but fails to show, the claimed surface roughness. Aoki discloses a plasma display panel

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including a protective film having a surface roughness of 30 nm or more. Therefore, it would have been an obvious modification to someone with ordinary skill in the art, at the time of the invention, to modify the structure as taught by Applicant's admitted prior art to provide a surface roughness of 5 nm or more, as suggested by Aoki, in order to reduce discharge voltage and improve light illuminance.

Claim 14 is rejected are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Applicant's admitted prior art as shown on figures 1-3B and their descriptions on pages 1-9 of the instant application in view of Aoki (U.S. Patent No. 5,993,543). With regard to Claim 14, Applicant's admitted prior art, as stated supra, essentially discloses the claimed invention but fails to show, the claimed protective film orientation. Aoki discloses a plasma display panel with a protective layer (14) having a (111) crystal orientation (see page 9, lines 56-60). Therefore, it would have been an obvious modification to someone with ordinary skill in the art, at the time of the invention, to modify the structure as taught by Applicant's admitted prior art to provide a protective film with a (111) crystal orientation, as suggested by Aoki, in order to improve high sputtering resistance.

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Allowable Subject Matter

2. Claims 2, 3, 5, 7-9, 11, 13, 15 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

3. Applicant's arguments have been fully considered, but are not deemed persuasive for the reasons stated in the body of the office action. Regarding the rejection of claim 1, Applicant argues that *"the values for specific resistivity of Sooda would not achieve the benefits of the present invention"* and *"Sonoda actually teaches away from the present invention by teaching that a resistivity of an n-type metal oxide semiconductor is lowered by treating the metal oxide with a metal halide"*. However, the examiner disagrees and notes that as stated in the rejection, Sonoda was cited for the teaching of a metal oxide semiconductor or a conductive material of a desired resistivity that can be obtained by controlling the quantity of an unsaturated metal halide, as stated on column 8, lines 1-6. Therefore, the claimed invention of claim 1 does not structurally or patentably distinguish over that taught by the prior art as shown in the rejection. Applicant's arguments regarding claims 2, 3, 5, 7-9, 11, 13, 15 and 19 are moot in view of the allowable subject matter stated above. Lastly, regarding claims 4, 5 and 18, Applicant relies on the arguments presented for claim 1 and thus are considered addressed by the examiner based on the discussion as shown above.

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Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Edgardo Ortiz (Art Unit 2815), whose telephone number is (703) 308-6183 or by fax at (703) 308-7722. In case the Examiner can not be reached through a direct telephone call, you might call Supervisor Tom Thomas at (703) 308-2772. Any inquiry of a general nature or relating to the status of this application should be directed to the Group 2800 receptionist whose telephone number is (703) 308-0956.

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1/26/04


Tom Thomas
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